

THE STONE TOOL ASSEMBLAGE¹³

The stone tool assemblage of 'Ein Hilu comprises 48 items (Tables 9.8–9.12), of which the majority are grinding implements. These were retrieved from all excavation areas, and were found on floors, in fills, and on the surface. In this report we describe the outlines of the stone assemblage with the hope that future excavation and further studies will contribute to our understanding of the roles of stone tools for the Chalcolithic communities in the desert fringes of Samaria. Despite its size and preservation, this assemblage is the only published Chalcolithic assemblage from the desert fringes of Samaria. Thus, this account is aimed primarily at describing the stone assemblage, and presenting relevant data.

Grinding Tools (Tables 9.8–9.11)

The vast majority of the tools found at the site are grinding tools. They were divided, based on the characteristics of the grinding surfaces, into two main types: lower, 'passive' grinding tools, and upper, 'active' grinding tools. Further division into sub-types was done according to the general morphology of the item.

Lower grinding tools (Fig. 9.35: 1–5; Tables 9.9–9.10)

The lower grinding stones (N = 18) are made primarily of porous, vesicular basalt (N = 12). Other raw materials include limestone (N = 2), sandstone (N = 3), or unidentified raw material (N = 1). These were found whole (N = 3) or fragmented (N = 15), and only a small portion seem to represent large items.

Most of the broken lower grinding stones were broken both across their widths and their lengths (Fig. 9.35: 1–2), which was probably the reason for their discard. A few show smoothing or other modification on their bases (non-active surfaces), and some still bear pecking marks. Most items exhibit smoothing on their grinding surfaces. These include a quern fragment, grinding slabs (N = 12, Fig. 9.35: 1–4), a polishing slab, and three pallets (Fig. 9.35: 5). Most of the grinding surfaces are convex, while a few tend to be flat. Two of the pallets are whole, and are 5.6–5.8 cm long, 3.6–4.2 cm wide, and 1.3 cm thick. Both weigh 100 g, and have convex-concave cross-sections. Grinding/smoothing appears on 80–100% of the grinding face.

¹³ This section was written by D. Rosenberg, University of Haifa.

Upper grinding tools, mullers and burnishers

(Figs. 9.35: 6; 9.36: 1–4; Tables 9.9, 9.11)

The upper grinding elements (N = 14; 29.1% of the stone assemblage) include two items made of compact, fine-grained basalt, porous basalt (N = 6), limestone (N = 4), and sandstone (N = 2). These were found whole (N = 4), or damaged (N = 10). Damaged tools are fragments lacking large parts of the original tool (usually broken across the width of the item), or items missing small parts.

Typologically, seven sub-types were distinguished. One-hand (18.5×14.5 cm) oval manos with plano-convex cross-sections (Fig. 9.35: 6); small round, bi-plano rubber/burnisher (Fig. 9.36: 1); plano-convex mano fragments (N = 3); fragments of bi-plano manos (N = 2); amorphous rubbers (N = 2), short squat pebble-muller/burnisher; and elongated, thick pebble-muller/burnishers (N = 3, Fig. 9.36: 2–4). While some of these show a greater degree of modification, finish and possibly standardization (Fig. 9.35: 6), others, specifically muller/burnishers, are pebbles modified probably through use only (Fig. 9.36: 1–4). Most items (N = 12, 25%) have one grinding surface, while two items have two. Most grinding surfaces are flat (N = 10, 71%), three are convex and one is amorphous. For all items length ranges between 7.2 and 18.5 cm, width between 3.7 and 14.8 cm, and thickness between 2.1 and 6 cm. Only two items bear clear polish on their active surfaces. The sandstone items are made from yellow or pinkish sandstones. One burnisher has flaking scars, and it is possible that this item was also utilized for pounding.

Vessels (Fig. 9.36: 5–7; Tables 9.8–9.9)

The four vessels found are made of fine-grained compact basalt (N = 2), limestone (N = 1) and unidentified raw material (N = 1). All were found broken. These include a crudely made and finished globular door-socket (Fig. 9.36: 5), a V-shaped bowl with a flat outer base and rounded rim (Fig. 9.36: 6), and a solid-base pedestal (Fig. 9.36: 7). The latter lacks most of its upper part, and thus the specific characteristics of the bowl are missing. It has a raised or protruding line encircling the neck at the point where the bowl and base meet. Both bowl and base widen outwards from the neck. A shaped depression characterizes the lower part of the base, and it bears flaking scars. Both these characteristics are typical of similar items from other Chalcolithic sites in Israel (Rowan 1998).

Type/raw material	Compact basalt	Porous basalt	Limestone	Sandstone	Unidentified	Total	%
Lower grinding stones		12	2	3	1	18	38
Upper grinding stones	2	6	4	2		14	29
Vessels	2	1	1			4	8
Perforated items			2			2	4
Flaked pieces			2			2	4
Various items	2		3	1	2	8	17
Total	6	19	14	6	3	48	
%	13	40	29	13	6		100

Table 9.8. Breakdown of the stone tool assemblage.

Preservation	Whole	%	Broken	%
Lower grinding stones	3	17	15	83
Upper grinding stones	4	29	10	71
Vessels			4	100
Perforated items	1	50	1	50

Table 9.9. The stone assemblage – preservation rates among the grinding tools.

Lower Grinding Stones						
Sub-type	Quern fragment	Grinding slab	Large, plano-convex grinding slabs	Polishing slab	Rectangular pallets	Total
N	1	10	3	1	3	18
%	6	56	17	6	17	100

Table 9.10. Lower grinding tools – sub-types.

Upper Grinding Stones								
Sub-type	Medium-small (one hand), plano-convex manos	Round-small, bi-plano manos	Amorphous rubbers	Short, squat-thick pebble	Elongated-thick pebble	Fragments of a plano-convex manos	Fragments of bi-plano manos	Total
N	2	1	2	1	3	3	2	14
%	14	7	14	7	21	21	14	100

Table 9.11. Upper grinding tools – sub-types.

Perforated Items (Tables 9.8–9.9)

Two perforated objects were found. These include a weight fragment and a whorl, possibly of a spindle. The weight is crudely made of limestone, and the break cuts through the aperture or drilling. The aperture with a minimum diameter of 1.2 cm was drilled from the opposite facets, with drilling marks still apparent.

The other item is a rounded whorl with a shaped flat facet, made of pinkish limestone. The aperture is slightly off-centre, and has relatively straight sides. This was probably a modification of the original biconic drillings. Thus, the middle of the drilling has the about the same diameter as the openings. Smoothing is apparent on both faces.

Flaked Pieces (Table 9.8)

Two flaked pieces were found, made of limestone. These are thick squat pebbles bearing flaking marks. One is whole, 2.8×4.6×5.7 cm, and the other is broken, bearing scars on its perimeter.

Various Items (Fig. 9.36: 8–9; Table 9.8)

The eight items in this group are made of fine-grained, compact basalt (N = 2), limestone (N = 3), sandstone (N = 1), and unidentified raw material (N = 2). These include a rounded pebble, probably a hammerstone (Fig. 9.36: 8); a flat pebble bearing two opposed drillings (Fig. 9.36: 9); a small oval pebble bearing one concave active face, 3–4 mm deep and a convex, slightly flattened base; a basalt pebble that may have been used as a small anvil (9.8×7.6×3.6 cm); an oval basalt pebble pointed at one end (16×7.8×5.8 cm); a limestone slab bearing flaking marks; a sandstone piece, probably part of an abrading tool (11.1×4.8×2.9 cm); and a fragment of an unidentified purplish raw material.

The Stone Assemblage – Discussion

Although small, the stone assemblage of 'Ein Hilu suggests several observations bearing implications for the understanding of life in the hilly flanks of the eastern Samaria fringes during the Chalcolithic period. The stone assemblage seems to be an echo of the well-known stone industries of the Ghassulian-Beer Sheva cultures known from many sites in Jordan and Israel. Nonetheless, several components seem to be missing here (fenestrated stands, decorated bowls and others), which does not appear to be an outcome of the scale or mode of the excava-

tions at the site. Furthermore, it seems that this assemblage also bears some affinities to the stone industry of the Golan (Epstein 1998).

Selection of raw materials suggests the predominant use of locally available stone, although stone from greater distances is also present. Grinding dominates the assemblage, and evidence for pounding is rare. Within the grinding paraphernalia a distinction should be made between large (probably food-processing) grinding tools made of basalt

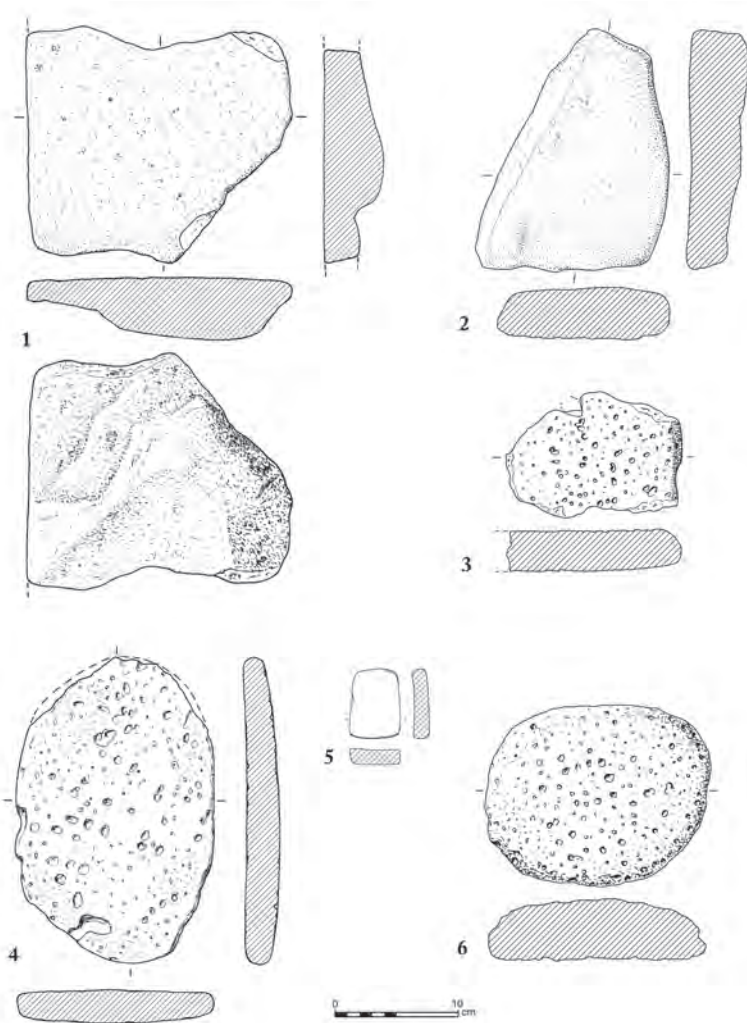


Figure 9.35. The stone assemblage – Part 1.

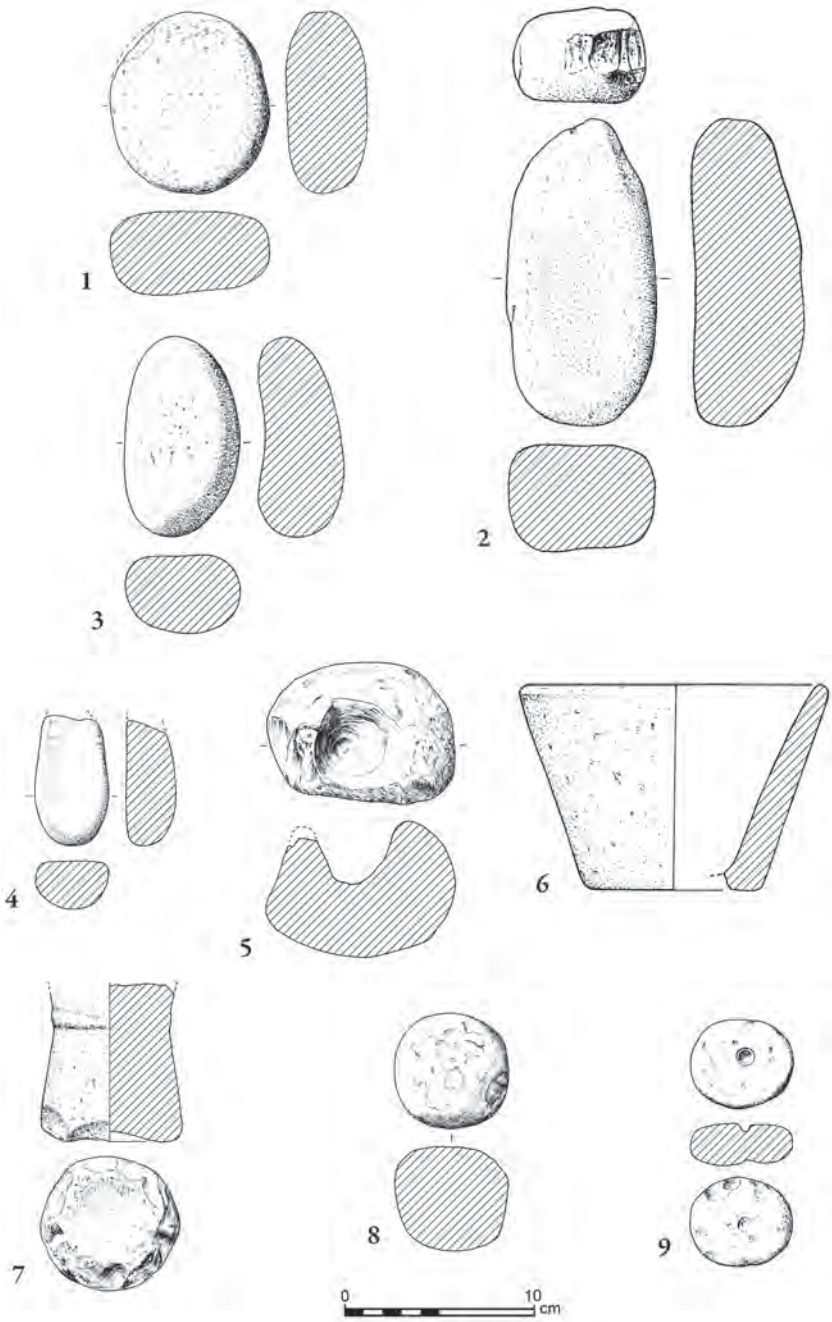


Figure 9.36. The stone assemblage – Part 2.

Locus	Lower grinding stones	Upper grinding stones	Vessels	Perforated items	Flaked pieces	Various items	Total
1	2						2
14	2						2
19	1			1			2
24					1		1
104		1	1				2
128		2					2
129				1			1
135	1						1
142		1					1
199		1					1
300	1						1
305	1		1				2
306		2					2
307		1					1
311	1						1
314		1					1
316		1	1				2
329						1	1
429	2					2	4
431	2						2
433	2	1					3
438		1				1	2
443					1	2	3
447			1				1
455		1					1
457	1						1
460		1					1
468	1						1
470	1					1	2
4007						1	1
Total	18	14	4	2	2	8	48
%	37.4	29.6	8.4	4.1	4.1	16.4	100

Table 9.12. Breakdown of the stone tool assemblage by loci.

and limestone, and usually smaller items, frequently made of limestone pebbles and sandstone. The latter were probably used for a variety of tasks, not necessarily related to food preparation. Other items represented in the stone assemblage suggest that additional tasks may have been aided by the use of stone implements.

THE FAUNAL REMAINS¹⁴

Animal bones were collected by hand-picking, while dry and wet sifting through 5 mm mesh was done in selected loci. Zooarchaeological and taphonomic analysis procedures follow Raban-Gerstel *et al.* (2008). Identified specimens were examined and scanned for preliminary taphonomic observations, and coded anatomically and taxonomically in an electronic database. Morphological markers aided differentiation between closely-related species. Separation of sheep (*Ovis aries*) from goat (*Capra hircus*) was based on morphological criteria of selected bones (following Boessneck 1969). Sheep and goat skeletal elements that could not be identified as to species were combined in a sheep/goat category. Separation of wild boar from domesticated pig was based on metrical analysis of selected cranial elements (data from Haber 2001 and Hongo and Meadow 1998). Similarly, the separation of aurochs from domestic cattle was based on morphometric analyses. Measurements of fully ossified bones were taken following von den Driesch (1976).

The faunal remains of 'Ein Hilu encompasses domesticated livestock and wild game. The distribution of identified animal bones from Stratum 1 at both excavated areas is shown in Table 9.13, and Table 9.14 presents the animal bones found in Stratum 2.

A total of 107 complete and fragmentary identified bones were derived from the different strata and areas of excavation of 'Ein Hilu. Most of the bones retrieved are from Area B (NISP = 77). Area C comprised 26 identified bones and Area E had the smallest number of identified bones (NISP = 4). The most significant occupational stratum at all areas of excavation is Stratum 1. This stratum was found to comprise the most abundant bone assemblage (91 of the identified bones, 85% of total NISP). On the other hand, Stratum 2 consists of only 12 identified bones (11% of total NISP), while Stratum 3 is even more meagre, and contains only four identified bones (unfused distal femur and scapula

¹⁴ This section was written by N. Raban-Gerstel and G. Bar-Oz, University of Haifa.

The Dawn of the Bronze Age

The Pattern of Settlement in the Lower
Jordan Valley and the Desert Fringes of
Samaria during the Chalcolithic Period
and Early Bronze Age I

by

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